

RECEIVED
CENTRAL FAX CENTER
JUL 19 2006Serial No. 10/646,310
67,008-073
S-5674REMARKS

Applicant wishes to thank the Examiner for the detailed remarks and the telephone interview of July 10, 2006. Claims 1-14 and 22-31 have been amended. New claims 32-35 are presented. Accordingly, claims 1-14 and 22-35 are pending.

Claims 1-14 and 22-31 were rejected under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement. Claims 1-14, 22-24, and 30-31 were rejected under 35 U.S.C. §112, second paragraph. Applicant has replaced the negative limitation "non-circular" with a broader positive recitation elongated as suggested by the Examiner. Applicant respectfully suggests that this amendment overcomes the 35 U.S.C. §112 rejections.

Claims 1, 3-7, 9-11, 13, 22-24, 25, 28-29, and 30-31 were rejected under 35 U.S.C. §102(b) as being anticipated by *Graff* (5,222,297). Applicant respectfully traverses this rejection. Applicant has amended each of the independent claims to specifically recite a composite rotor blade spar. *Graff* discloses only a conventional retention tulip 10 formed of conventional techniques from steel, aluminum, titanium, or other suitable strong metal or composite material. A dry multi-layer woven fiber wrap 22 is then laid up as a plurality of layers 26 over the retention tulip 10. A circumferential band 24 of structural fibers is wound about each braided layer 26 at the neck down region 18 of the retention tulip 10. *Graff* thereby discloses a relatively conventional ply structure from a multiple of layers wrapped about the retention tulip to form a solid propeller blade. *Graff* is simply not a composite rotor blade spar nor does *Graff* disclose or suggest a braided sleeve of any type, yet alone a multiple of zero degree fibers interwoven with said multiple of braided bias angle fibers which form a braided sleeve with an elongated cross-sectional profile which surrounds a longitudinal axis. Simply, *Graff* is a propeller blade manufactured by a layering process which neither discloses nor suggests Applicant's present invention.

Claims 1-3, 5-10, 12-14, 22-26, and 30-31 were rejected under 35 U.S.C. §102(b) as being anticipated by *Violette* (2002/0008177). Applicant respectfully traverses this rejection. *Violette*, like *Graff*, discloses a solid propeller blade having a foam core over which braided glass fiber material is laid in layers. Although a lay up process different than *Graff* is disclosed by *Violette*, the end result of a solid propeller blade is still the end result. *Violette* therefore has the same

Serial No. 10/646,310
67,008-073
S-5674

deficiencies of *Graff* in regard to Applicant's claims as the design and manufacture of a propeller blade is inherently different than a structural composite rotor blade spar. As also previously stated, the folded-over arrangement of *Violette* simply cannot be achieved were *Violette* utilizing a multiple of zero degree fibers interwoven with said multiple of braided bias angle fibers which form a braided sleeve with an elongated cross-sectional profile. Notably too, *Violette* specifically recites that the core 30 serves as an integral mandrel during lay up of the dry composite layers. [¶0031] *Violette* simply cannot meet the composite rotor blade spar limitation nor the specific braided sleeve limitations as recited in Applicant's amended claims.

Claims 1, 3-7, 9-11, and 22-24 were rejected under 35 U.S.C. §102(b) as being anticipated by *Plummer Jr.* (4,741,087). Applicant respectfully traverses this rejection. *Plummer* is directed to pre-expanded braided sleeving. The sleeving is utilized for protective jacketing on elongated objects such as cabling, cordage, rope, and as protection for delicate and finish surfaces of articles of manufacturing generally during handling and shipping. Under no just interpretation may the sleeving as taught by *Plummer* be properly construed as a composite rotor blade spar, nor in our opinion and judgment would one of ordinary skill in the art look to the art of making pre-expanded, flexible braided sleeving in order to form a structural composite rotor blade spar.

In conclusion, none of the cited references disclose or suggest a composite rotor blade spar, thus, the claims as amended are properly allowable.

In addition, *Graff* and *Violette* simply do not disclose a tri-axial braid having a multiple of braided bias angled fibers and a multiple of zero degree fibers interwoven with said multiple of braided bias angled fibers. Rather, *Graff* and *Violette* disclose forming a plurality of layers of angularly woven fibers and laying a un-directional layer of fibers in-between the layers of angularly woven fibers. Thus, *Graff* and *Violette* disclose adding unidirectional material in-between layers of angularly woven fibers. They simply do not disclose interweaving the angled fibers with the zero degree fibers. That is, *Graff* and *Violette* utilize the relatively conventional lay up technique of separate layers located between other layers of dry, multi-woven fiber wraps that are then integrated by a resin transfer molding process. *Graff* and *Violette* simply do not disclose weaving the angular fibers with the straight fibers in a braided sleeve. Applicant specifically claims that the braided sleeve has a multiple of braided bias angle fibers and a multiple of zero degree fibers interwoven

Serial No. 10/646,310
67,008-073
S-5674

with said multiple of braided bias angled fibers. Such a braided sleeve arrangement utilized in the manufacture of a composite rotor blade spar is simply not disclosed or suggested by the cited references.

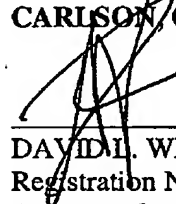
New claims 32-35 recite further features of the composite rotor blade spar which are neither disclosed nor suggested by the cited references and are thus properly allowable.

Please charge \$150 to Deposit Account No. 19-2189 for 3 claims in excess of 20. If any additional fees or extensions of time are required, please charge to Deposit Account No. 19-2189.

Applicant respectfully submits that this case is in condition for allowance. If the Examiner believes that a teleconference will facilitate moving this case forward to being issued, Applicant's representative can be contacted at the number indicated below.

Respectfully Submitted,

CARLSON, GASKEY & OLDS, P.C.



DAVID L. WISZ
Registration No. 46,350
Attorneys for Applicant
400 West Maple, Suite 350
Birmingham, Michigan 48009
(248) 988-8360

Dated: July 19, 2006

N:\Clients\SIKORSKY\IP00073\PATENT\HELO-73 Amendment with RCE.doc